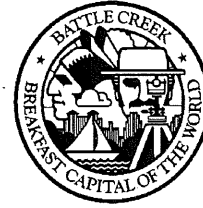


Department of Public Works
Environmental Services



MEMORANDUM

To: Christine Huff, Purchasing Agent

cc: Jim Ritsema, Assistant City Manager
Richard Beardslee, Waste Water Superintendent

From: Ken Kohs, Public Utilities Director *CKK*

Date: July 3, 2013

Re: Pulverdryer Equipment for Wasterwater Treatment

The end products for City of Battle Creek wastewater treatment processes are clean water and residual solids. The water is discharged to the Kalamazoo River, and the solids are recycled in summer months on agricultural fields as a soil conditioner and fertilizer and incinerated in winter months. The Wastewater Division will no longer be able to incinerate solids in 2016 without a significant investment in 40 year old equipment due to new air quality regulations that will come into effect. The Division has been contemplating either landfilling the material or building storage tanks for year round recycling. Both options involve significant capital costs.

A company from Springfield, our neighbor, has had discussions with our Wastewater Superintendent Richard Beardslee from the time he was at the City of Kalamazoo regarding an innovative residual solids process. They have since been in contact with us here in Battle Creek about the potential for using their equipment at our Wastewater Plant. The company is Pulverdryer and they have developed a hydraulic press and centrifugal turbine that dewater solids to dryness levels that accommodate biomass energy production. Residual Solids from our Wastewater Plant can readily be made into a product that generates renewable energy and a carbon based by-product that is highly demanded in agriculture and industry by putting it through the Pulverdryer process.

Our engineering consultant for wastewater system capital improvements, Jones and Henry Engineers Ltd., has reviewed solids handling alternatives for us over the past several years. They were the ones that provided us with aforementioned solids handling alternatives for the future. They have also reviewed the recent Pulverdryer proposal and advised us that the process may be feasible for us. It would also be a potential way to further realize our City renewable energy policy goals and could ultimately dramatically reduce our solids handling costs for the future. However, the Pulverdryer process has not been installed anywhere in the United States for the treatment of municipal wastewater treatment solids, so an initial installation would be recommended to verify efficiency improvements and to assure that it is acceptable with the Federal and State regulatory agencies.

Pulverdryer has provided the City of Battle Creek with a proposal for installing their process at its wastewater treatment plant in two phases. In the first phase, there will be a 90 day pre-installation data collection period where the initial system will be installed to collect data needed for DEQ and EPA permitting. Upon successful completion of the first phase, the second phase will commence with the full installation of the final equipment. Our Wastewater Division staff would operate and maintain the equipment with assistance from Pulverdryer during the first phase and ultimately the permanent installation as well. In phase two, the City will be required to construct a permanent building to house the process including equipment to make the dried solids into a pellet that can be sold as biomass fuel. Another future improvement may be to install more energy efficient dewatering equipment at our Wastewater Plant than the Centrifuges that we currently use.

In the unlikely event permitting cannot be obtained or the process does not meet the City's expectations in the first phase, the agreement includes provisions for a refund of amounts paid and the project would be discontinued with no further obligations.

An opportunity exists for the City to install energy conversion process equipment to further reduce our solids handling net costs. For now, the Public Works Department recommends purchasing the Pulverdryer equipment for solids handling. Arrangements for financing the project in conjunction with the Kellogg Company to help them realize their environmental sustainability goals. The remaining funding would come from Wastewater Plant Rehabilitation funds that are allocated as part of the City's capital improvement plan.

Please prepare a Resolution regarding awarding a contract to Pulverdryer for City Commission consideration. The residual solids equipment for the pilot and permanent process would be furnished and installed by them. The account number to charge the work to is 590.24.6530.801.310. Contact me at your convenience if you have any questions regarding this matter.